

What is claimed is:

1. An integral circuit protection device providing overcurrent and overvoltage protection for a circuit and configured to be connected to the circuit, comprising:

5 an overcurrent protection portion;
an overvoltage protection portion; and
a plurality of terminals for connecting both the overvoltage and overcurrent protection portions of the integral circuit protection device to the circuit to be protected, wherein a part of the overvoltage protection

10 portion serves as one of the plurality of terminals.

2. The integral circuit protection device of claim 1, wherein the plurality of terminals includes first, second and third terminals, the part of the overvoltage protection portion serving as one of the plurality of

15 terminals being the third terminal, the overcurrent protection portion being electrically connected between the first and second terminals, and the overvoltage protection portion being connected to the second terminal.

3. The integral circuit protection device of claim 1, wherein the overcurrent protection portion includes a fuse.

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4. The integral circuit protection device of claim 1, wherein the overvoltage protection portion includes a bi-directional thyristor.

5. The integral circuit protection device of claim 1, wherein the plurality of terminals are configured to electrically connect the overcurrent protection portion in series with the circuit to be protected and to electrically connect the overvoltage protection portion in parallel with the circuit to be protected when the integral circuit protection device is

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30 electrically connected to the circuit to be protected.

6. The integral circuit protection device of claim 1, further comprising:

~~a thermally conductive portion that conducts heat away from the~~

35 overvoltage protection portion.

an overcurrent protection device electrically connected between the first and second terminals, the overcurrent protection device being contained by the circuit element mounting member; and

an overvoltage protection device electrically connected to the second terminal and being contained by the circuit element mounting member, wherein a part of the overvoltage protection portion serves as the third terminal.

14. The circuit element of claim 13, wherein the circuit element mounting member is further comprised of a tube having an outer surface and an inner hollow portion;

wherein the overcurrent protection device is disposed within the inner hollow portion of the tube, and each of the overvoltage protection device, the first terminal and the second terminal is disposed on the outer surface of the tube.

15. The circuit element of claim 13, wherein the overcurrent protection device is a fuse configured to protect the circuit from excessive currents.

16. The circuit element of claim 13, wherein the overvoltage protection device is a thyristor configured to protect the circuit from excessive voltages.

17. The circuit element of claim 14, wherein the tube further has a first end and a second end, the first terminal being disposed at the first end, and the second terminal being disposed at the second end opposite from the first terminal.

18. The circuit element of claim 17, wherein the first and second terminals include electrically conductive layers disposed on the outer surface of the tube adjacent to each of the first and second ends and extending into part of the inner hollow portion adjacent to the first and second ends;

wherein conductive end caps respectively cover the electrically conductive layers and the first and second ends and are electrically connected to the electrically conductive layers; and

wherein the electrically conductive layers are electrically connected to the overcurrent device disposed within the inner hollow portion of the tube.

5 19. The circuit element of claim 13, further comprising:
 an integrally formed bond pad and connector piece connected between
 the second terminal and the overvoltage protection device.

10 20. The circuit element of claim 13, wherein the overcurrent device is electrically connected in series with the circuit to be protected and the overvoltage protection device is electrically connected in parallel with the circuit to be protected.

15 21. The circuit element of claim 13, wherein the circuit element mounting member further comprises:

- a substrate having first and second surfaces; and
- a plurality of wire terminations disposed on at least one of the first and second surfaces, wherein at least the first and second terminals are each respectively comprised of one of the plurality of wire terminations.

22. The circuit element of claim 21, wherein the overcurrent protection device is comprised of a fuse element electrically connected between the first and second terminals and disposed on at least one side of the substrate, and the overvoltage protection device is comprised of a thyristor electrically connected to the second terminal and disposed on at least one side of the substrate.

23. The circuit element of claim 21, further comprising:
an atmospherically resistant encapsulant disposed on at least one side
30 of the substrate and having a fuse element and thyristor therebetween.

24. The circuit element of claim 21, wherein the first, second and third terminals are formed on at least a same side of the circuit element.

25. The circuit element of claim 21, further comprising:
an integrally formed bond pad and connector piece connected between
the second terminal and the overvoltage protection device.

